DOCUMENT RESUME

ED 442 946 CE 080 335

AUTHOR	Gorard, Stephen; Furlong, John; Fevre, Ralph; Rees, Gareth
TITLE	How To Spot a Lifelong Learner at 40 Paces? The Two Components of Determination. Patterns of Participation in Adult Education and Training. Working Paper 9.
INSTITUTION	Bristol Univ. (England).; Cardiff Univ. (Wales). School of Education.
SPONS AGENCY	Economic and Social Research Council, Lancaster (England).
ISBN	ISBN-1-872330-10-X
PUB DATE	1997-00-00
NOTE	45p.; A Cardoff and Bristol University ESRC-Funded Learning Society Project. Also funded by the Gwent, Mid Glamorgan, and West Wales Training Enterprise Councils. For other working papers, see CE 080 328-341 and CE 080 402.
CONTRACT	ESRC-L123251041
PUB TYPE	Reports - Research (143)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Access to Education; *Adult Education; Developed Nations; Educational Opportunities; Educational Research; Foreign Countries; Geographic Regions; Job Training; *Lifelong Learning; Models; *Participant Characteristics; *Participation; Postsecondary Education; *Predictor Variables; *Trend Analysis; Vocational Education
IDENTIFIERS	Learning Patterns; *Wales (South)

ABSTRACT

This paper considers the social and structural determinants of adult participation in education and training. Section 1 deals with 11 lifetime learning trajectories identified from a systematic stratified sample of 1,104 education and training histories collected from respondents aged 15-65 in industrial South Wales. For the purposes of the paper, they are analyzed at a higher level of abstraction, with only five categories: non-participant, delayed, transitional, lifetime, and immature. This section is a simple report of empirical findings relating to the similarities and differences between the trajectories in terms of the major variables. These findings form the basis of an outline hypothesis of the social and structural determinants of participation in lifelong learning, which section 2 makes explicit. Section 3 tests the hypothesis by attempting to predict which post-compulsory trajectory each respondent will follow, using only variables not used in the classification into trajectories. A conclusion finds the determinants of participation in adult education and training are not linearly progressive; the two-component model of determination suggests that immediate further and higher education histories are predictable from privileged family background, while later learning is more dependent on changing opportunities, motivation, and learner identity. Appendixes include classification of trajectories, data tables, and trajectory determinants. Contains 25 references. (YLB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 442 946

CE

S Gorard

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PATTERNS OF PARTICIPATION IN ADULT EDUCATION AND TRAINING

A Cardiff and Bristol University ESRC- funded Learning Society Project

WORKING PAPER 9

How to spot a lifelong learner at 40 paces?

The two components of determination

Stephen Gorard, John Furlong, Ralph Fevre and Gareth Rees

1997

SCHOOL OF EDUCATION

Cardiff University of Wales

CE020335

ISBN 1 872330 10 X

2

BEST COPY AVAILABLE

3

LIST OF CONTENTS PAGE NUMBER

Introduction	1
Describing the trajectories	3
Intrinsic differences	3
Potential predictors	5
Correlates	6
Classifying the determinants	9
Unique determinants	9
Component-specific determinants	11
Pairwise determinants	12
Testing the two component model	13
Immediate post-compulsory	15
Later post-compulsory	19
Conclusion	24
Acknowledgements	25
References	26
Appendices	28

ISBN 1 872330 10 X

PATTERNS OF PARTICIPATION IN ADULT EDUCATION AND TRAINING

A Cardiff and Bristol University ESRC-funded Learning Society Project

WORKING PAPER 9

How to spot a lifelong learner at 40 paces? The two components of determination

Stephen Gorard, John Furlong, Ralph Fevre and Gareth Rees

1997

Introduction

Patterns of participation in adult learning vary between parts of Britain, and even between local areas (NACETT 1994). A local training and education culture, based on regional provision and employment patterns may have a residue in the past (Rees and Rees 1980), which may be the outcome of processes distinctive to the regions. Changes in industrial structure and employment, although linked to national and wider developments are differently experienced in local labour markets (Ashton et al. 1990). For example, collieries throughout the UK closed partly as a result of changes in international energy markets, but the effect in Ebbw Vale or the Rhondda is clearly different in terms of both employment and training to England, or even Cardiff. The influence of locality may be mediated by family-based factors leading to further systematic variation in patterns within localities. Similarly there are well-established links between participation in education, and by implication later training, and personal characteristics, for example sex, age, marital status, ethnic background, prior education, and occupation (Maguire et al. 1993), but these are also affected by location. For example, the significance of one's sex is partly determined by whether local opportunities

are currently for mining, electronic assembly or services. The local provision of training and its quality affects the pattern (Evans 1990). For example, the national policy of incorporating FE colleges has had different effects in the Rhondda valleys and Cardiff (Rees and Thomas 1994), and Welsh colleges, already less well-funded than their English counterparts according to some accounts, are now threatened with more cuts in funding (Nash 1997). These are some of the reasons why the project of which this paper forms a part combines detailed study of the local opportunities for learning over the last fifty years, with householder interviews to determine people's awareness of and attitude to those opportunities, and a large-scale survey of participation histories.

This paper continues a consideration of the social and structural determinants of adult participation in education and training started in Gorard *et al.* (1997_a), against the background described in Rees *et al.* (1997), and using the methods described in Gorard et al. (1997_b). A systematic stratified sample of 1,104 education and training histories have been collected from respondents aged 15 to 65 in industrial South Wales, and classified into eleven lifetime learning trajectories (Appendix A). For the purposes of this paper, the eleven trajectories will be analysed at a higher level of abstraction as defined in Table 1.

Table 1
Frequency of five learning trajectory categories

Trajectory	Frequency	Percentage
Non-participant	339	31
Delayed	144	13
Transitional	222	20
Lifetime	353	32
Immature	42	4

The non-participants are those who reported no continuous education after initial schooling, no substantive work-based training, no participation in government schemes, and no formal adult education. The immature are those still in continuous full-time education (they are not used in the models below). The transitional learners reported only full-time continuous education or immediate post-school work-based training so far in their lives. The delayed

learners have a "learning gap" after initial school until at least age 21, but then reported at least one substantive episode of education or training. The lifetime learners reported both transitional and later episodes. It should be noted that no value judgements are implied in the creation and naming of these groups, since previous publications from this project have already shown ambivalence to the view that the creation of a true learning society can be measured in terms of increases in the transmission of formal, and therefore society-controlled, information and skill.

This paper is in three sections. The first is a simple report of empirical findings relating to the similarities and differences between the trajectories in terms of the major variables collected by this study. These findings form the basis of an outline hypothesis of the social and structural determinants of participation in lifelong learning which is made explicit in the second section. The third section tests this hypothesis further by attempting to predict which post-compulsory trajectory each respondent will follow, using only variables not used in the classification into trajectories.

All differences and relationships described are significant at the 5% level, using omnibus chi-squared, t-tests, one-way analysis of variance, or Kruskal-Wallis one-way analysis of variance as appropriate (Reynolds 1977, Levine 1991, Norusis 1994). However, since repeated tests of significance were made using the same data, corroboration of results was required to minimise the danger of accepting spurious relationships (Stevens 1992). Corroboration comes from other results indicating the same finding, whether from the survey or later interviews, and from agreement with what is already known from sources such as census data, previous studies and the theoretical framework (see Working Papers 1 to 6). The figures presented in tables as "scores" are mean scores, or percentages in each category, or mean ranks of ordinal variables (as appropriate).

1. Describing the trajectories

Intrinsic differences

The learning trajectories are based on the occurrence, length, frequency, and type of formal learning undertaken by each respondent since initial schooling.

The differences between them in terms of variables measuring these events are therefore intrinsic to the classification, and used only to highlight the size of the differences. The average age at which respondents left full time continuous education (FTCE) and the age at which they started their first economic episode (work, unemployment, or pregnancy for example) are shown in Appendix B. Non-participant and delayed learners made the transition from school aged 15 or 16, and the transitional and lifetime learners were aged 17 to 18. It has been noted before that the main feature of those who leave education early is a strong antipathy to the whole of formal education, and a general dislike of learning - perhaps induced by poor teaching (Crombie and Harries-Jenkins 1983). Therefore what happens at school may determine later non-participation as well as the age of leaving. The lifetime learners generally undertook more periods of study and therefore left FTCE later than the transitional learners. They also more often received training in their first job after leaving education and have undertaken more work-related training throughout their lives so far. It is interesting to note that in this respect and in the undertaking of voluntary post-compulsory education (PoCE), the delayed learners are more similar to the lifetimers than the transitionals are. It illustrates the notion that the diversity here can be explained by two components, determining immediate and delayed post-compulsory learning, absent for the non-participant but present for the lifetimers as suggested previously in Gorard *et al.* (1997_a). This notion is examined in more detail in the remainder of this paper. In initial confirmation of the model, the number of lifetime learning episodes, the number of years spent in education and training, and the percentage of each respondents life spent in education and training for the lifetime learners is almost the exact sum of those for the delayed and transitional learners (Table 2). It is almost as though a lifetime learner is a transitional and a delayed learner combined.

Table 2
Lifelong learning by trajectory

Score\trajectory	Delayed	Transitional	Lifetime
# life episodes	1.9	0.9	3.2
Years learning	1.9	2.1	4.7
% life learning	7.0	13.9	21.5

Potential predictors

The predictors are based on the information given by each respondent that was "knowable" at the time when the trajectories began to diverge at age 15 or 16. They have already been listed in Gorard *et al.* (1997_a) in a preliminary attempt to categorise cases as either non-participant or lifetime learners based solely on what was known about them at school-leaving age. Here they are examined to see what light they throw on the differences between all four main types of trajectory. Several have been described before and are repeated here for convenience (Appendix C). Lifetime and transitional learners are becoming more common over the 50 years reported by this study, while the non-participant and delayed learners are becoming less common, so the determinants of front-loaded education, whatever they are, are increasing in effectiveness, while the determinants of later learning are unaffected or may even be reduced in effectiveness.

Table 3
Background by trajectory

Score\traject.	Non-participant	Delayed	Transitional	Lifetime
Age in years	49	48	41	44
Father born	1925	1925	1930	1923
% male	34	47	50	56
% born in site	75	71	77	63
% failed 16+	4	4	3	4

One key finding is that lifetime learners are generally born to older parents. The years in which the parents of respondents were born is generally consistent with the age of the respondents, except that the lifetime learners have parents who are on average older. Non-participant and delayed learners were born when their fathers were aged 23 on average, with transitional 25 and lifetime learners at 29 (Table 3). Delayed and non-participant learners have parents who are more nearly the same age or with the mother older, whereas transitional and lifetime learners have fathers who are almost two years older than their mothers on average. It may be that those who are married (or more literally become mating partners) younger are more likely to be of the same age since they meet at an institution such as school which is

age stratified, whereas those who marry later may both be economically independent, with the older father perhaps more settled and more able to invest in his child's education, and the younger mother still old enough to provide a role model for her daughter of a woman living alone before marriage.

Gender has been a key predictor of participation in formal learning with men generally undertaking more episodes, particularly of continuous academic education and substantive work-based training such as apprenticeships. They are therefore over-represented in the lifetime learners category, while women predominate in the non-participant category. Women have generally undertaken fewer episodes, with those reported skewed towards part-time, voluntary, self funded and deferred participation. Participation is also related to mobility, in the sense that delayed and lifetime learners were more frequently born outside the research site and even outside South Wales. The parents are a key influence in determining lifetime patterns of educational participation. The social class prestige of the parents is positively linked to learning, especially staying on in education after school leaving age. Non-participant learners generally have parents who left education earlier than those of other trajectories. The lifetime qualifications of parents are clearly in line with their social class prestige, and their children's patterns of participation. The non-participant respondents are less likely to have attended school regularly, less likely to have taken any qualifications at age 16, and consequently achieved a lower standard of qualification at 16. However, from the 4% of the mature trajectories who reported taking qualifications at 16 and failing all of them, it can be surmised that failure as this stage has little impact overall. Those who give up at this stage are matched by those who persevere.

Correlates

Correlates are the variables not used in the definition of the trajectories since they are only known after their paths have begun to diverge at the age of 15 or 16. They could be both causes and effects of the trajectories followed by individuals, or they could be symptomatic of a more complex relationship. For example, the age at which a parent first has children could be partly the result (i.e. effect) of economic stability, so that those still studying full-time are likely to have their first child when older. On the other hand, having a child at an early age could itself be a barrier (i.e. a cause) towards non-

participation in formal education. On the other hand, both having children and participating in education could be socially conditioned by family and friends. The purpose of this section is simply to identify the correlates (their impact is estimated later).

One of the correlates is the current area of residence of each respondent. Apart from a small number who live outside South Wales and tend to be more highly educated, the picture for each research site is fairly simple. Those living in Blaenau Gwent, the most deprived area in the study, are more likely to non-participant or perhaps transitional learners. Those in Bridgend, the most rapidly expanding area in the study, are more likely to be either transitional or lifetime learners, whereas those in Neath Port Talbot with a more recent history of established industry are more likely to delayed learners and most likely to be lifetime learners (Table 4). The delayed and lifetime learners have more often moved between the four geographic regions (research site, South Wales, UK, and elsewhere), with the non-participant generally never having moved far until they leave home at the age of 22 or 23. However it is the delayed and the non-participant learners who have been associated with the focus area of South Wales and their current area of residence the longest. This is another example of the way in which different pairs of the trajectory patterns can be linked via their correlates, but it is remarkable that lifetime/non-participant and delayed/transitional are never linked, which is exactly as predicted by a two-component model of determinants (see below). The area of residence of parents matches the patterns of mobility described so far in most respects. Lifetime learners are more likely to have a parent living outside their own current area of residence, and non-participant learners less so. However, those whose parents live abroad are more likely to be non-participant. There may be at least two processes at work here - one is the increased mobility of better educated professionals and the other is the economic and emotional impact of early separation from one or both parents. The picture for siblings is a more straightforward association between learning and moving. Of those currently married, the age at which each group first lived away from home and without a partner is revealing. More of the lifetime learners left home to follow a course of study without getting married first, and so their first episode living alone comes early, whereas the non-participant more often left home as part of the move to get married and the age of 31 represents the average age of separation for those partnerships that did not last.

As expected, lifetime learners have the highest qualifications at the end of FTCE and their relative position improves over their lives (Appendix D). Delayed learners on the other hand have relatively poor qualifications at age 16, but rapidly start to catch up with transitional learners over their lifetime. They are more like the lifetime learners in being more likely to report a hobby. Although social class prestige matches qualifications in most respects, delayed learners end up with an occupation of higher social class than the one they spend most of their life in, whereas those on other trajectories do not show the same mobility.

Table 4
Correlates by trajectory

score\traject	Non-participant	Delayed	Transitional	Lifetime
Bridgend	29	30	36	37
Blaenau Gw	42	33	37	23
Neath Po.Ta	30	38	28	40
Years in site	40	39	35	33
% hobbies	10	23	15	21

Non-participant and delayed learners have more children, with non-participant having them at a younger age, while lifetime learners are similar to their own parents in having children later in life. Generally the education and training of children also follows the pattern of the parents (Table 5). Families mostly maintain their social class advantage over generations, but it should be noted that over the three generations represented here born between the 1880s and the 1980s, the delayed learners have significantly improved their class prestige compared to transitional learners. Some of this may be age-related, but it could also be evidence of the individual economic efficacy of adult education and training or that the delayed learners are in part an artificially submerged (e.g. by immigration or divorce) middle-class of frustrated lifetime learners.

Table 5
Social class by trajectory

Rank\traject.	Non-participant	Delayed	Transitional	Lifetime
Highest class	627	500	544	408
Class father	524	519	505	450
Class mother	556	460	485	468
Class partner	458	372	404	358
Class sibling	462	355	421	366

2. Classifying the determinants

Another way of looking at the patterns is to classify the variables not in terms of when they occurred, but whether they have the same range of values for a subset of the four main trajectory types.

Unique determinants

These are the correlates showing a pattern for one group of learners different to all of the others. They can therefore be used to identify that group specifically. The non-participant and lifetime learners are more clearly distinct from both other groups, with the other groups distinguished below chiefly by not being non-participant or lifetime.

Non-participant

The non-participant group is older than average for the sample, and therefore at least part of the explanation for the differences between this group and the other three are age (or period) related. These differences could be based on changes in the local opportunity structure (the subject of a future paper) However, the delayed learners have a very similar age profile to the non-participant while showing few of the same differences which suggests that age alone is an insufficient explanation. Non-participant learners have older children on average, but they also gave birth at a younger age. They more often attended Secondary Modern schools at school-leaving age, but not Grammar or Technical schools. Their children also more often attended Secondary Modern, but not Grammar or Technical schools. They were older

if they separated from a life-partner and older if they found a new one, but in contrast to the other three groups their first period of living away from their parent's home was with a partner. They report a longer-lasting first economic period before change of state, but there is little evidence that this is because jobs are becoming less secure and could be partly a selective memory effect.

Non-participant learners are more frequently white females living in Blaenau Gwent with an adult first child who is unwaged. Fewer than in the other three groups attended school regularly, or took any qualifications at age 15/16. They are the least qualified group at age 16, after FTCE and throughout their lives. To a large extent their family members have similar educational profiles. On average, their mother, father, sibling, current partner, and first child left full-time continuous education (FTCE) earlier, and had lower level qualifications throughout their lives. Non-participant learners tend to have a less prestigious class profile, and all of their family members follow this pattern. Markedly fewer report a leisure interest requiring sustained study or practice.

Lifetime

Lifetime learners are more frequently male, born outside their current area of residence, less often resident in Blaenau Gwent, with both parents living outside their current area of residence (more often from the UK outside South Wales), and with a chapel/non conformist religious background. They were younger during their first period of living away from their parent's home without a partner, perhaps being less likely to move to be with a partner than for an educational course. They attended school regularly, more often at Grammar schools, took examinations at 16, gaining higher qualifications at 16 after FTCE and throughout their lives. More continued to further education (FE), as opposed to work-based training at age 16. They undertook more FTCE episodes, more training episodes in their first job and throughout their lives, therefore reporting more lifetime learning episodes, more years and a greater proportion of their life since 16 involved in education or training. As with the non-participant learners, their family members have similar educational histories. Their parents and first child are more highly qualified than average, while their sibling and current partner left FTCE later as well as being more highly qualified. The respondents, their fathers and their first child all have a more prestigious class profile.

Delayed

The delayed learners differ in every respect noted above from the lifetime and non-participant learners, for example being somewhat less likely to have attended a Secondary Modern or a Grammar school (i.e. displaying more diversity). Their unique characteristics are that they are more likely to live in Neath Port Talbot, but to have been born elsewhere in South Wales. They are more likely to have attended a minority school type at age 15, including elementary, fee-paying, denominational, and technical. Their first episode of post-compulsory education outside work generally took place later in life.

Transitional

The transitional learners also differ from all others in every respect noted above, for example being more often male than the non-participant but more often female than the lifetime learners. In addition, their unique characteristics are that they are less likely to live in Neath Port Talbot, but more likely to live in the same area as their father. To some extent this last finding could an age-related effect, but as noted above, since the lifetime learners are also younger than average but less likely to live near their father it is feasible that both age and geographical mobility are present here. Another partially age-related characteristic is that this group have younger parents, confirming that only the lifetime learners are born to older parents. They more often attended a comprehensive school, speak English at home, and remain unmarried. They tend to be younger when they first move from one region to another and to have undertaken longer episodes of post-compulsory education outside work, perhaps continuing their education part-time immediately after leaving school at age 16.

Component-specific determinants

These are the correlates which are not specific to one trajectory pattern, but which are common to two. None are common to lifetime and non-participant and none are common to delayed and transitional. This is direct confirmation of the hypothesis that there are two sets of determinants underlying the patterns above, one concerning initial transition and one concerning later adult participation.

Continuous full-time education (transitional and lifetime)

The following characteristics are more likely for both transitional and lifetime learners *vis-a-vis* other groups, suggesting that they are the basis of those determining initial transition from school. People undertaking FTCE after school-leaving age tend to be younger, with younger partners, siblings and children, and to have been in their current area of residence and South Wales generally for a shorter time. They attended school more regularly, more likely took qualifications at age 16, are better qualified at 16 and throughout life. They more often receive training and undertake more training episodes in their first job, and spend a higher proportion of their life in education or training. Their father, partner and sibling left FTCE later, and both of their parents are more highly qualified, with their father of more prestigious occupational class. They have fewer children, but their first child is more likely to have attended school regularly and is now less likely to be unwaged.

Post-compulsory education (delayed and lifetime)

The following characteristics are more likely for both delayed and lifetime learners *vis-a-vis* other groups, suggesting that they are the basis of those determining later participation in adult education and training. Those undertaking later learning are older for their first PoCE episode but undertake more of them, reporting more training episodes as well, and therefore more lifetime learning episodes overall. They more often report a leisure interest requiring sustained study or practice in addition. They do not give birth until older. They have moved between regions more often, and more often have a mother and sibling living outside the research site, with the sibling more often living elsewhere in South Wales. They, their partner, and their sibling are of more prestigious social class, while their sibling and first child are more highly qualified. The child more frequently attended a minority school.

Pairwise determinants

The correlates which only distinguish between two trajectories all relate to the transitional/lifetime divide. Lifetime learners generally have older children who are less likely to be unwaged. They are more likely to report undertaking further education in order to gain a qualification or skill, whereas the transitional learners are more likely to report undertaking further education at

the suggestion of an adult such as a parent or employer or an institution such as a job centre.

3. Testing the two component model

If there are two relatively distinct sets of determinants of participation in post-compulsory education and training as outlined above (and in more explicit form in Appendix E), then one would expect the determinants of lifetime learning to be similar in some respects to both transitional and delayed learners and dissimilar in most respects to those of the non-participant (perhaps the inverse of them). In the same way one would expect the determinants of transitional and delayed learners to be similar in some respects to both lifetime and non-participant learners, but dissimilar to each other. There are many indications above that these descriptions are valid, but a more formal method would be to attempt a classification of each case into one of two possible trajectory types using only information not also used in the definition of the trajectories, such as participation in education. If it is easier to split a transitional from a delayed than a transitional from a non-participant learner for example this would provide substantial support for the two component model.

There is no reason to suppose that the simple variables described above are themselves the determinants of participation, since they may operate in conjunction, so that the significance of gender varies over time, or the impact of a qualification varies geographically for example. Model selection loglinear analysis of this data (Norusis 1994) suggests that all three-way interactions and above can be ignored for practical purposes, especially since they are difficult to use in building policy-relevant theories. The analysis below therefore only considers potentially useful two-way interactions, and even these are found to be of marginal significance. There is also no reason to suppose that the variables above do not share common variance. It would be unparsimonious, and less practical for policy implications, to include all of them. Some may be reduced by looking for the principal components underlying them such as age or period (Gorard 1997), others may be eliminated by iteratively fitting the model both with and without them to measure their impact net of the effect of all other determinants.

The method chosen for this purpose was to enter the potential determinants of educational participation into logistic regression analyses in successive steps. Each step represented a period in the life of the respondents, so that the variables entered in the first step included year of birth and parents education (among others), those in the second included school attendance record and examination results at 16, the third included leisure interests and the background of life partners, while the fourth step included length of residence in the research site. In this way, using a simple forward-causation model, the significance of each period in determining lifetime learning trajectories can be assessed in isolation. The full list of predictors used in each step is in Appendix F. More could have been used but it should be noted that a compromise has to be reached between including as many variables as possible and losing cases because of missing values. For example, if the education of the fourth child of each respondent were used, the number of cases with at least four children would be too small for serious analysis.

In each step, all of the new variables from that life period are added to those remaining in the model from previous steps, and the model is assessed both with and without each of the added variables in turn using backward selection and the conditional statistic (Norusis 1994). The method maximises the chances of correct classification, while minimising the number of variables retained at each step, and produces four solutions predicting patterns of participation in adult education and training when the respondent is born, when they finish initial education, in adult life, and at the present time. This method was used to run several analyses to test the two components of determination idea (an example of the SPSS syntax appears in Appendix G).

The two analyses that are dealt with in detail here are a direct attempt to measure the two components of determination, one for transitional learning and one for later post-compulsory learning (with a third model used as a control). If the variables known about each respondent when they are born are added to the logistic regression functions, it is possible to predict the trajectories that involve immediate post-school education and training more accurately than the trajectories that involve later adult education and training. This result, not in itself very surprising, is some confirmation of the two component notion. Adult learning is, as suggested above, less determined by initial social background factors than transitional learning is. When the variables concerning initial schooling are added to these functions, it makes

little difference to the accuracy of the "immediate" predictions (Table 6). Those who will stay on in school, or move from school to college or work-based training, are largely determined by their background (as suggested in Gorard 1997). Although school performance is a good predictor of staying-on it is not the primary cause of it, and as seen above many of those who "fail" all qualifications at school stay on in full-time education after 16. However, performance at school does significantly increase the accuracy of the "later" predictions, as do variables concerned with adult life and what is known about each respondent now. The suggestion here is that later learning is less determined by background and more by school and career characteristics, while those who will continue with education or training at age 16 are already on such a trajectory a long time before any rational decision is made. While this may seem unsurprising to some, it does challenge the prevalent idea that "if at first you don't succeed, you don't succeed" (Tuckett 1997), or that adult learners in the 1960s did not include many men, unskilled workers or those who left school at 15 (Lowe 1970). Participation in post-compulsory is not and, according to this survey, never has been a simple linear progression from one form of learning to another. Success or failure at school may have more impact on later than immediate participation since the former is more dependent upon an individual's conception of themselves as a "learner" or a "non-learner", whereas the family and its support structures may have more to do with whether one is encouraged to prolong adolescence, or to learn a trade or simply to start bringing money home at an early age.

Table 6
Impact of determinants in temporal sequence

	Birth	School	Adult	Present
Immediate	69.55%	73.25%	79.84%	80.25%
Later	65.02%	77.37%	86.42%	87.24%

[the percentages are the proportion of cases correctly predicted using only the data from each step].

Immediate post-compulsory education and training

It is possible to create a logistic regression function which is 100% accurate in discriminating between those who stay on in education or training after school and those who do not, and with a low log-likelihood suggesting an excellent fit

between the model and the data. However, it involves a very large number of predictors which has two practical drawbacks - the number of cases dwindles (see above) making the better fit less surprising, while the number of coefficients in the resultant equation is unwieldy. The model below (and that which follows for predicting later learning) is therefore one acceptable compromise between goodness-of-fit, size of usable sample, correctness of prediction, and parsimony. The model is 80% accurate and an adequate fit with the data given the size and age range of the sample (Table 7), with a reasonably clear division between post-16 learners and the rest.

Table 7
Classification Table

observed/ predicted	None	Immediate	Correct
None	83	24	77.57%
Immediate	24	112	82.35%
		Overall	80.25%
		-2 Log likelihood	268
		Goodness of fit	235

At birth the significant indicators of immediate post-compulsory education are age, gender and place of birth, with language, ethnicity, religion, and parental characteristics not nearly as relevant. Language, ethnicity and religion perhaps show too little variance in the region of study (Gorard 1997b) to be general lifetime learning determinants even though they are interesting in their own right (see future paper on the education of minorities in South Wales). At school, regular attendance and sitting for a qualification at age 16 are the most significant indicators of further education or training, with school type and the actual level of qualification achieved making little net difference. This may be because school type is adequately encompassed by other variables such as age and sitting for examinations. In younger cohorts the variance is limited as most attended comprehensives, and in older cohorts those in grammar schools generally took examinations and those in secondary moderns generally left school at 15. As already mentioned, for those on a trajectory leading to examinations the actual results in the first attempt at 16 make little difference to whether, rather than what, further education is attempted.

Table 8
Coefficients of determination

Variable	Coefficient	Significance
Age	-0.02	.20
Place of birth		
Research site	-0.47	.23
South Wales	+0.13	.76
UK	-0.42	.43
Abroad	+0.76	-
Male	+0.50	.00
Female	-0.50	-
Attended school	+0.64	.01
Not attended school	-0.64	-
Took 16+ exams	+0.28	.05
Not took 16+ exams	-0.28	-
Social class		
Service	+0.53	.24
Intermediate	-0.32	.41
Working	-1.17	.02
Unwaged	+0.96	-
Number of children	-0.31	.03
Constant	+1.93	.03

Of the variables concerning adult and present life, only social class and the number of children make any real difference to the correctness of trajectory classification. Again this is probably because other indicators such as the age of first having a child or the background of siblings and life partners are already encompassed by existing variables. Those who have more children tend to have the first one younger, and those who have children at a young age tend not to stay in education or training at age 16, for example. The fact that current area of residence and length of residence in South Wales are not good predictors of participation in this model is presumably because they are already present to some extent in the place of birth variable which is given priority as it occurs first, and is itself the major determinant of the other two. Table 8 shows the coefficients for those variables retained in the model.

In theory, it is possible to calculate the odds of anyone in South Wales continuing after school in education or training from these coefficients (see Gorard et al. 1997_a). For example, a 50 year old woman born in Neath Port Talbot, who attended school regularly but left school at 15 without taking any qualifications, has since worked as a domestic cleaner and raised two children, would have the following odds of education or training in the two years after initial schooling:

$$1/(1 + e^{-(-0.02*50 -0.47 -0.50 +0.64 -0.28 -1.17 -0.31*2 +1.93)})$$

or around 19%.

A 30 year old man born in Cardiff who attended school regularly and took 7 'O' levels at age 16, has since worked as a salesman, and has one child, would have the following odds of education or training in the two years after initial schooling:

$$1/(1 + e^{-(-0.02*30 +0.13 +0.50 +0.64 +0.28 -0.32 -0.31*1 +1.93)})$$

or around 90%.

It might be argued that having children and having an occupation (on which to base social class) happen after the transition from school and therefore cannot be considered as determinants. There are several points against this. Models using only strictly prior events have been created and found to be very similar, with the coefficient for age changing from 0.50 to 0.56 but that for gender staying the same for example. In fact the only coefficient to alter significantly is that for taking examinations, which becomes almost twice as important. The stability of the solution suggests that it is a good one, but that examinations at age 16, the age and number of children, parent's, partner's, sibling's and the respondents social class are all linked. Secondly, it is not clear that the transition from school must come before having children, or planning to have children, or leaving to get married (which in the age cohorts before oral contraception may have implied having children). Nor is it clear that leaving school must come before the formation of class attitudes to education, nor that it is "apprentice"-type training that leads to certain occupations rather than certain occupations having such training. What is often neglected in models having a strict temporal sequence of causation is that pull can be as

effective as push (see Gorard et al. 1997_b for discussion on causal models). Thirdly this version of the model has been selected for publication because it allows direct comparison between the determinants of early and later learning, and the influence of children, for example, on later learning is indisputable. Fourthly, allowing all variables to be used as predictors has not altered the order of events very much. The coefficients for age, gender, place of birth, and attendance at school are the key ones, and as has been shown, later measures such as current area of residence do not add to the accuracy of the function (although they can be used as rough proxies in their own right).

Later post-compulsory education and training

The logistic regression function discriminating between those who return to education or training in adult life and those who do not is 87% accurate and an adequate fit with the data given the size and age range of the sample (Table 9), with a reasonably clear division between later adult learners and the rest.

Table 9
Classification Table

observed/ predicted	None	Later	correct
None	84	15	84.85%
Later	16	128	88.89%
-	-	Overall	87.24%
-	-	-2 Log likelihood	204
-	-	Goodness of fit	391

The coefficients for the larger number of determinants of later learning are shown in Table 10. Although some of the variables are the same as for transitional learning, their relevance is not. For example, those with no qualifications are much more likely to return to study than those with qualifications below the GCSE benchmark. In addition, the majority of the determinants of later learning are unique (e.g. social class of partner).

Table 10
Coefficients of determination

Variable	Coefficient	Significance
Age	-0.05	.21
Place of birth		
Current area	+0.29	.65
South Wales	-0.94	.18
UK	+1.61	.05
Abroad	-0.96	-
Male	+0.54	.01
Female	-0.54	-
School type		
Comprehensive	-0.41	.29
Grammar	+1.19	.02
Secondary Modern	+0.16	.64
Other	-0.94	-
Qualifications at 16		
None	+0.65	.45
Elementary	-1.40	.00
O level	-0.48	.41
5+ O levels	+1.23	-
Social class		
Service	+1.55	.00
Intermediate	-0.14	.78
Working	-0.33	.57
Unwaged	-1.08	-
Leisure interest	+0.54	.04
Social class of partner		
Service	0.02	.97
Intermediate	-0.93	.00
Working	-0.80	.03
Unwaged	+1.75	-

Social class of sibling	Coefficient	Significance
Service	+0.44	.19
Intermediate	+0.41	.17
Working	+0.46	.24
Unwaged	-1.31	-
Place of birth, mother		
Current area	-1.15	.05
South Wales	-0.01	.98
UK	+2.54	.02
Abroad	-1.38	-
Number of children	-0.35	.11
Age of having child	-0.07	.04
Length of residence SW	+0.06	.05
Constant	+4.28	.02

Since the overall effect of each variable across all values is zero, individuals can still be fitted to the model even if they have values missing (and doing so has shown how accurate these predictions are), and the variables can also be considered in isolation (so that men are more than 1.7 times as likely as average to take part in further learning). The function requires more information about each respondent than that above. Using the example of the 50 year old woman born in Neath Port Talbot above, who attended school regularly but left school at 15 without taking any qualifications, has since worked as a domestic cleaner and raised two children, her school attendance and taking of examinations are now insignificant in determining her participation in education or training. However, the example must be extended to include the type of school she attended (a measure of both age and ability as determined by the 11+), her qualifications at 16, whether she reported a hobby requiring study/practice, the social class of her partner and most-qualified sibling, the age at which she had her first child, length of residence in South Wales and where her mother was born. If this woman went to secondary modern school, does yoga and swimming with her friends, has a husband who was an electrician, a brother who is a teacher, and a mother born in Port Talbot, and this woman has lived in Neath Port Talbot all of her life having her first child at age 23, then she would have the following odds of education or training in later life:

$1/(1 + e^{-(-0.05*50 +0.29 -0.54 +0.16 +0.65 -0.33 +0.54 -0.93 +0.44 -1.15 -0.35*2 -0.07*23 +0.06*50 +4.28)})$

or around 80%.

If the 30 year old man born in Cardiff who attended school regularly and took 7 'O' levels at age 16, has since worked as a salesman, and has one child, is also known to have attended a comprehensive school, passing 4 of the 7 'O' levels, with no reported hobby, a partner who is a housewife, no siblings, a child born when he was 23, a mother born in South Wales, and he has lived in South Wales all of his life, then he would have the following odds of education or training in later life:

$1/(1 + e^{-(-0.05*30 -0.94 +0.54 -0.41 -0.48 -0.14 -0.54 +1.75 +0 -0.01 -0.35 -0.07*23 +0.06*30)})$

or around 75%.

This is quite a remarkable turnaround, and these examples are not simply made up. They are based on two of the early follow-up interviews. The working-class woman who left school early with no qualifications has a higher probability of participating in later education or training than the intermediate class man who stayed on in education or training after 16. There are several possible reasons for this. One, of course, is their age with the older respondent having had more years in which to take part in something, but this ignores both the predictability of trajectories once they are embarked on, and the influence of motivation. The woman has shown herself interested in taking part in therapeutic social activities with friends and enjoyment of these is precisely the kind of experience that could lead an apparently non-participant learner to participate in more formal learning. Another possible distinction is the influence of the teacher brother who may be both an informal tutor and a role model. The 30 year old salesman only scores as highly as he does because he has an unwaged partner.

The influence of this unwaged category is interesting given that it is predominantly composed of women (and older men) but its effect is in addition to that caused by gender alone. Comparing the coefficients for unwaged across the two models it can be proposed that women are more likely

to participate in immediate education than their gender coefficient suggests but less likely to take part in later learning. However, where unwaged women have a partner he (since they are in fact all male) is much more likely to be a learner. This could be partly due to the removal of barriers such as time (e.g. CERI 1975) and child-care (e.g. Gorard *et al.* 1997c) that others experience, while both characteristics could also be a symptom of relatively privileged economic position.

It is noteworthy that whereas being on a trajectory through initial education leading to sitting for examinations increases the chances of transitional study or training, the role of qualifications themselves are ambiguous. Those who are highly qualified at 16 do tend to participate more in later learning, but then so do those who have none. It is those who have some qualifications but who missed the "cut" of 5 'O' levels who are less likely to return to study/training. All of these factors are clear indications that the determinants of immediate and later post-compulsory learning are different.

A control model attempting to distinguish between non-participant and lifetime learners on the one hand, and transitional and delayed learners on the other, was an almost complete failure, showing little discrimination and a poor fit to the data. This makes it slightly less likely that the above models are based on artefact. Although the exact values of the coefficients in Tables 8 and 10 are liable to change as variables are added or removed from the models, their direction of difference and significance are robust. A further check on the model entails one major advantage from using regression rather a standard analysis of variance approach, which is that it is more nearly linked to the ideal of a causal model, and the odds calculations can be used for further cases. In the present study, 42 cases are classified as immature (still in continuous education) and these played no part in the creation of the function. The odds of those who were aged 15 at the start of the project can be calculated and used to predict whether they move from school to more education or training at 16, and these predictions can be tested in the "laboratory of South Wales" before the end of the project. In addition, those cases which do not fit the function well can be monitored over time (funds permitting) to register those changing from non-participant to delayed or from transitional to lifetime learner. This longer term study would be a fascinating test of the two component model. Even where predictions made today are wrong, they could become "right" in the near future (and *vice versa*

of course) - for example a respondent classified by their self-report as non-participant but predicted here to be a delayed learner may exhibit later participation. Such considerations are, as always, the real test of social theory.

Conclusion

Of the variables discussed in part one of this paper, the intrinsic variables such as the number of lifelong learning episodes are part of the definition of the trajectories. The predictor variables such as the initial education of parents, have been shown to signpost the early trajectory followed by nearly all respondents. The other correlated variables, such as the age of giving birth, could also help predict or explain the adult learning trajectories after they begin to diverge at age 16, and it is assumed that early participation, qualification, success or failure can themselves become important determinants of further participation. The difficulties of identifying causes *via* temporal sequences in social science models (indeed in any models) have been discussed in Gorard *et al.* (1997b), and restricting potential causes to those that occur prior to their theoretical effects has no logical justification (see for example Gambetta *et al.* 1987).

In summary, this study suggests that the determinants of participation in adult education and training are not linearly progressive. Although it is generally true that those with more privileged family backgrounds have more success at school (see Gorard 1997), and that those who are more successful stay on in education, and that those who are already more highly educated more often receive training in work, this general pattern can be made more specific. Changes in the opportunity structure and in society over time, differences between the genders, variations between regions, and the interactions between all of them play a part in the overall pattern. The two component model of determination suggests that it is immediate further and higher education histories which are predictable from privileged family background, while later learning is more dependent on changing opportunities, motivation and learner identity than it is on the earlier trajectory determinants. The next step is to consider the more specific trajectories within each type, taking into account not only the timing and amount of learning but the form of its provision, and this will the subject of a future paper.

Since 1945, there has been a growth in the proportion of each age cohort staying on in full-time education at school-leaving age, while there has not been an equivalent increase in the numbers of lifetime learners, and there has actually been a slight decrease in the numbers of delayed learners, despite all the talk of the importance of careership and multiskilling (Jones 1996). The current emphasis in discourse on the importance of lifelong learning is therefore a necessary and welcome relief from an obsession with front-loaded provision. In a sense it is easy to see how to increase participation and success in initial education. All that need be done is improve the overall economic position of individuals in society. However, this is not a job for teachers and educationalists, since despite some current educational rhetoric there is little indication that the reverse also holds, that improving education improves the economic position of society as a whole (Gorard *et al.* 1997c). "We must accept that education is an ineffective form of social engineering.... if we want to distribute wealth and power in our society, we should distribute it by direct political means.... we should see education, not as a means of redistributing the cake, but as part of the cake itself" (p.84 in Crombie and Harries-Jenkins 1983).

The analysis from this paper offers a ray of hope to educationalists. They may be able to make more of a difference by addressing the determinants of later participation, such as motivation, which are susceptible to change by enthusing one individual, than by addressing the determinants of early participation, such as parental class, which are not (cf. Keep 1997). This would be a more efficient, more cost-effective and perhaps a more satisfying way of moving towards a learning society in the UK.

Acknowledgements

The ESRC (Grant Number L123251041), Gwent, Mid Glamorgan and West Wales Training Enterprise Councils for funding. The families and training providers for participating.

References

Ashton D., Spilsbury M. and Maguire M. (1990) **Restructuring the Labour Market: Implications for youth**, Basingstoke: Macmillan

CERI (1975) **Recurrent Education: Trends and issues**, Paris: OECD

Crombie A. and Harries-Jenkins G. (1983) **The demise of the liberal tradition**, University of Leeds: Department of Adult and Continuing Education

Evans W. (1990) **Perspectives on a Century of Secondary Education in Wales**, Aberystwyth: Centre for Educational Studies

Gambetta D. (1987) **Were they pushed or did they jump? Individual decision mechanisms in education**, London: Cambridge University Press

Gorard S. (1997) **Plugging the gap: The Welsh school-effect and Initial education trajectories, Patterns of participation in adult education and training. Working paper 8**, Cardiff: School of Education, ISBN 1 872330 09 6

Gorard S. (1997$_b$) **The region of study: Patterns of participation in adult education and training. Working paper 1**, Cardiff: School of Education, ISBN 1 872330 02 9

Gorard S., Rees G., Fevre R. and Furlong J. (1997$_a$) **Lifetime Learning Trajectories: Close encounters of five kinds, Patterns of participation in adult education and training. Working paper 7**, Cardiff: School of Education, ISBN 1 872330 08 8

Gorard S., Rees G., Furlong J. and Fevre R. (1997$_b$) **Outline Methodology of the study: Patterns of participation in adult education and training. Working paper 2**, Cardiff: School of Education, ISBN 1 872330 03 7

Gorard S., Furlong J., Fevre R. and Rees G. (1997$_c$) **The Learning Society: Patterns of participation in adult education and training. Working paper 5**, Cardiff: School of Education, ISBN 1 872330 06 1

Hagenaars J. (1990) **Categorical Longitudinal Data: Log-linear, panel, trend and cohort analysis**, London: Sage

Jones G. (1996) **Wales 2010 Three Years On**, Cardiff: Institute of Welsh Affairs

Keep E. (1997) **There's no such thing as society.... Some problems with an individual approach to creating a learning society**, paper presented to 2nd co-ordinating meeting ESRC Learning Society Programme, Bristol

Levine, G. (1991), **A Guide to SPSS for Analysis of Variance**, New Jersey: Lawrence Erlbaum

Lowe J. (1970) **Adult Education in England and Wales: A critical survey**, London: Michael Joseph

Maguire M., Maguire S. and Felstead A. (1993) **Factors Influencing Individual Commitment to Lifetime Learning. A literature review**, Employment Department

NACETT (1994) **Report on Progress**, London: NACETT

Nash I. (1997) Welsh demand cuts rethink, in **Times Educational Supplement**, 14/3/97, p.30

Norusis M. (1994) **SPSS Advanced Statistics 6.1**, SPSS Inc.

Rees G. and Rees T. (1980) Educational Inequality in Wales: Some problems and paradoxes, in Rees G. and Rees T. (Eds.), **Poverty and Social Inequality in Wales**, London: Croom Helm

Rees G. and Thomas M. (1994) Inward Investment, Labour Market Adjustment and Skills Development: recent experience in South Wales, in **Local Economy**, 9, p. 48

Rees G., Fevre R., Furlong J. and Gorard S. (1997) **Towards a social theory of lifelong learning: History, place and the learning society: Patterns of participation in adult education and training. Working paper 6**, Cardiff: School of Education, ISBN 1 872330 07 X

Reynolds H. (1977) **Analysis of Nominal Data**, London: Sage

Stevens J. (1992) **Applied Multivariate Statistics for the Social Sciences**, London: Lawrence Erlbaum

Tuckett A. (1997) An election shopping list for lifelong learning, in **Times Educational Supplement**, 14/3/97, p. 32

Appendix A - Classification of trajectories

Trajectory	Frequency	Percentage
Non-learner	141	13
Near non-learner	198	18
Delayed trainee	71	7
Deferred student	66	6
Twilight learner	7	1
False-start trainee	124	11
False-start student	143	13
Work-based learner	98	9
Early learner	210	19
Still at school	7	1
Full-time education	35	3

The classification used here is broadly that of Gorard *et al.* (1997_a), although some cases have been reclassified. These cases come from two small groups - some of those taking part in government schemes immediately after leaving school whose participation had been mis-transcribed, and some of those taking part in later work-based training. The overall effect has been to decrease the non-participant and delayed categories and increase the other two. This means that in some tables figures may differ from those published in earlier tables by up to 2%. The overall pattern and preponderance of each group remains unchanged.

Some of the polychotomous categorical variables used in the analysis have had categories collapsed together as shown below. This was done to reduce the number of structural and random zeroes in the tables (Hagenaars 1990).

Social class
- service
- intermediate
- working class
- unwaged or other

Qualifications after the age of 16
- none
- up to GCSE
- A level and above
- degree and above (or equivalents)

Schools
- comprehensive
- grammar
- secondary modern
- other

Family religion
- none
- Anglican
- Chapel/non-conformist
- other

Language spoken at home
- English
- other

Economic episodes
- full-time employed
- other employed
- full-time training or education
- unwaged or other

Reason for starting learning episode
- natural next step
- adult or organisation suggested it
- to gain qualification or skill
- enjoyment

Reason for leaving learning episode
- still participating
- job-related
- barrier
- lack of motivation

Appendix B - Intrinsic Differences between trajectories

Score/trajectory	Non-participant	Delayed	Transitional	Lifetime
Age of leaving FTCE	15.2	15.2	16.8	17.3
Age of starting work	15.7	16.1	17.1	17.5
% continued to FE	-	-	30	59
# of FTCE episodes		-	0.52	0.72
% any training in 1st job?	36	37	63	68
# of training episodes 1st job			0.4	0.6
# of training episodes in life		0.8	0.5	1.6
# of POCE episodes in life		1.1	0.1	1.0
# all learning episodes in life		1.9	0.9	3.2
Years spent in learning		1.9	2.1	4.7
% life spent in learning	-	7.0	13.9	21.5

BEST COPY AVAILABLE

Appendix C - Potential predictors of trajectories

Score/trajectory	Non-participant	Delayed	Transitional	Lifetime
Age in years	49	48	41	44
% aged 15-24	8	3	27	24
% aged 25-34	19	7	39	33
% aged 35-44	26	14	22	38
% aged 45-54	35	14	16	35
% aged 55-64	43	16	15	26
Father born	1925	1925	1930	1923
Mother born	1924	1924	1931	1925
% male	34	47	50	56
% born in site	75	71	77	63
% born S. Wales	17	15	13	23
% born in UK	7	13	8	11
% born abroad	1	2	2	3
Class father	524	519	505	450
Class mother	556	460	485	468
Father left ftce	14.2	14.4	14.9	14.9
Mother left ftce	14.2	14.7	14.7	14.7
Qual. father	397	440	472	499
Qual. mother	424	447	461	496
Regular attender?	81	83	86	94
Exams at age 16?	20	45	55	72
Qual. at age 16	381	521	581	682
School attended				
Comprehensive	24	10	26	31
Grammar	15	16	12	57
Sec. modern	45	15	17	24
Other school	28	20	15	35
% white	100	99	99	99

Family religion	Non-participant	Delayed	Transitional	Lifetime
% no religion	32	7	31	24
% Anglican	32	14	19	31
% Chapel	27	13	19	39
% Other religion	33	15	20	30
% speak English	99	98	100	97

Appendix D - Correlates of trajectories

Score trajectory	Non-participant	Delayed	Transitional	Lifetime
Bridgend	29	30	36	37
Blaenau Gwent	42	33	37	23
Neath Port Talbot	30	38	8	40
Age left home	22	22	22	21
# area moves	0.6	1.0	0.5	1.1
Age first move	23	21	18	21
Length in site	40	39	35	33
Length in SW	47	45	38	40
Father lives site	31	13	23	28
Father lives SW	29	15	10	45
Father lives UK	21	11	12	54
Father abroad	41	18	12	29
Mother lives site	32	13	23	27
Mother lives SW	28	13	9	48
Mother lives UK	26	12	10	52
Mother abroad	47	12	18	24
Sibling lives site	36	13	23	24
Sibling lives SW	25	20	10	42
Sibling lives UK	22	12	20	45
Sibling abroad	24	16	10	47
Current married?	67	68	60	70
Age partnerless	30.84	27.14	27.20	24.81
Age new partner	39.89	34.22	33.82	30.85
Age 1st POCE	-	38	19	33
Length 1stPOCE	-	1.1	1.8	1.2

BEST COPY AVAILABLE

First econ period	Non-participant	Delayed	Transitional	Lifetime
FT employed	91	80	83	88
Other employed	4	5	5	5
Training/edu	-	-	8	4
Unwaged/other	5	6	5	3
Length 1st job	5.5	4.5	3.5	4.6
Attempt qual FE?	-	-	82	83
Qualif. 1st FE	-	-	141	146
Qualif. FTCE	355	476	607	710
Qual. 1st POCE	137	177	157	165
Qual. lifetime	284	528	620	760
% any hobbies?	10	23	15	21
Age first hobby	28	31	29	30
Highest class	627	500	544	408
Class partner	458	372	484	358
Class sibling	462	355	421	366
Qualif. partner	290	371	357	401
Qualif. sibling	307	426	417	471
Partner left fice	15.5	16.0	16.4	16.7
Siblin left fice	15.8	16.8	17.0	17.4
Partner born	45	47	51	49
Sibling born	46	48	54	52

Child characteristics by trajectory

Score/traject	Non-participant	Delayed	Transitional	Lifetime
# of children	2.2	2.1	1.6	1.7
Age at birth	23.5	25.2	24.3	25.9
Age left home	20.3	19.8	20.6	19.7
Age of child	25.9	23.1	19.9	22.0
Age left fice	16.5	17.3	17.5	17.4
Class of child	284	256	257	235
Qualif. of child	242	310	291	328

School of child	Non-participant	Delayed	Transitional	Lifetime
Under 11	20	10	53	16
Comprehensive	36	14	17	33
Grammar	18	24	24	35
Second. Modern	61	11	14	14
Other	27	22	11	40
Regular attender?	94	95	97	97
FT employed	38	14	17	32
Other employed	31	24	12	33
Training/student	20	14	21	44
Unwaged	49	17	14	21

Motivation by trajectory

Score/trajectory	Non-participant	Delayed	Transitional	Lifetime
Reason left	school at 16			
Stayed on	-	-	43	53
Job	66	67	39	37
Barrier	18	22	6	5
Motivation	15	11	12	5
Reason for	FTCE at 16			
Natural step	-	-	19	19
Adult suggested	-	-	27	12
Gain qualificatio	-	-	44	62
Enjoyment	-	-	10	8
Reason left	FTCE			
Job	-	-	69	66
Barrier	-	-	24	26
Motivation	-	-	8	8

BEST COPY AVAILABLE

Appendix E - Trajectory determinants

The post-school transition determinants are:-
Year of birth (current age of respondent) - since participation in FE/HE has increased since 1945.
Background of father (age left full-time education, qualification, and social class) - perhaps partly because of privilege, partly providing a role model or educational assistance, and partly an expectation of what is normal.
Qualification of mother (as above).
Taking examinations at 16 - this is more significant than the outcomes, with several respondents continuing with education in order to "retake".
Qualifications at 16 - despite the above, more highly qualified respondents tend to continue and this reinforces the age-effect, since using the DfEe scale of examination equivalents the proportion of each age cohort achieving 5 or more O levels has increased since 1945.

It is noteworthy that these are all based on family and personal background characteristics combined with performance in initial education.

The later adult learning determinants are:
Social class - having a more prestigious occupation could be a result of education but the model should be non-recursive, since occupation can also supply finance, flexible working patterns and awareness of opportunities.
Influence of sibling (qualifications and social class) - to some extent the background of the most highly educated sibling matches that of the respondent and could be part of its cause, perhaps in the form of a role model.
Influence of partner (as above).
Having children later - the advent of children could be both a barrier and a stimulus to learning. They can reduce finance and the availability of free time, unless the parents are in a strong economic position.
Leisure interests - these could be merely an indication of an interest in adult learning, but they can also lead directly on to further more formal learning by acting as a non-threatening stimulus to voluntary study.
Motivation (reasons for starting and stopping study) - by adulthood each respondent may have a form of learning identity, with those who have been successful, who enjoy their success but who also value their skills and qualifications being prepared to attempt more.

10

Mobility (moving between regions, family living elsewhere) - to some extent this is linked to class, since those of more prestigious occupations are more likely to move, perhaps because of a national career structure, but it also true that those willing to move may find more opportunities for study.

It is noteworthy that none of these is significantly based on family or personal background characteristics or performance in initial education which are solely the determinants of transitional education and training. All the determinants of later learning are more to do with attitudes to learning than structural or social constraints.

41

Appendix F - The four stages of life

This is a list of the variables used to predict participation in adult education for each of the four steps. Although others were available, such as the father's area of residence, they were left out of later models as they were only of marginal relevance and they reduced the number of cases substantially (for example, nearly a quarter did not know where their natural father lived).

1 At birth
Year of birth
Gender
Place of birth
Ethnic group
Family language
Family religion
Age of parents at birth
Age of parents leaving full-time education
Qualification of parents
Social class of parents

2 Initial schooling
Type of school attended
Attendance pattern
Whether qualifications taken aged 16
Qualifications at age 16

3 After school
Social class
Leisure interests
Age partner left full-time education
Age sibling left full time education
Qualification of partner
Qualification of sibling
Social class of partner
Social class of sibling
Number of children
Age on first giving birth

4 Present day
Number of house moves between regions
Length of residence in research site
Length of residence in South Wales
Area of residence of mother
Area of residence of sibling

Appendix G - Example of SPSS syntax for four-step model

```
LOGISTIC REGRESSION type WITH
        area a1age a2 a3 a4 a5 a18 c12a d1 d2 d3 d7 d8num d11len e1.2age
        e1.3age e2.1age e2.2age e2.3age e2.4age e3.1 e3.2 e3.3 e3.4 e4.1 e4.2
        e4.3 e4.4 e6.3 e6.4 f1num f2.1age g1 g2
/CATEGORICAL area a2 a3 a4 a5 a18 c12a d1 d2 d3 d7 e3.1 e3.2 e3.3 e3.4
        e4.1 e4.2 e4.3 e4.4 e6.3 e6.4 g1 g2
/METHOD = BSTEP a1age d1 d2 d3 d7 e1.2age e1.3age e2.2age e2.3age e3.2
        e3.3 e4.2 e4.3 g1
/METHOD = BSTEP a2 a3 a4 a5
/METHOD = BSTEP a18 c12a d8num e2.1age e2.4age e3.1 e.34 e4.1 e4.4
e6.3 e6.4 f1num f2.1age
/METHOD = BSTEP area d11len
/PRINT = SUMMARY
/CLASSPLOT
```

[the variables are as listed in the appendix to Working Paper 2].